

## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference VUB-003-PCT	<b>FOR FURTHER ACTION</b> see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/EP 03/05805	International filing date (day/month/year) 03/06/2003	(Earliest) Priority Date (day/month/year) 03/06/2002
Applicant VRIJE UNIVERSITEIT BRUSSEL		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 7 sheets.



It is also accompanied by a copy of each prior art document cited in this report.

**1. Basis of the report**

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.



the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing:



contained in the international application in written form.



filed together with the international application in computer readable form.



furnished subsequently to this Authority in written form.



furnished subsequently to this Authority in computer readable form.



the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.



the statement that the information recorded in computer readable form is identical to the written sequence listing h furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

**4. With regard to the title,**

the text is approved as submitted by the applicant.



the text has been established by this Authority to read as follows:

STREPTOCOCCUS THERMOPHILUS STRAIN PRODUCING EXOPOLYSACCHARIDE

**5. With regard to the abstract,**

the text is approved as submitted by the applicant.



the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

**6. The figure of the drawings to be published with the abstract is Figure No.**

as suggested by the applicant.



because the applicant failed to suggest a figure.



because this figure better characterizes the invention.



None of the figures.

# INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 03/05805

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C12N1/20 C12P19/04 C08B37/00 A23C9/12 //(C12N1/20, C12R1:46)

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C12N C12P C08B A23C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

BIOSIS, EPO-Internal, FSTA, WPI Data, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X D1	FABER E J ET AL: "The exopolysaccharides produced by Streptococcus thermophilus Rs and Sts have the same repeating unit but differ in viscosity of their milk cultures" CARBOHYDRATE RESEARCH, ELSEVIER SCIENTIFIC PUBLISHING COMPANY. AMSTERDAM, NL, vol. 310, no. 4, August 1998 (1998-08), pages 269-276, XP004199143 ISSN: 0008-6215 the whole document --- -/--	1-5, 13-31

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

### \* Special categories of cited documents:

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

- \*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- \*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- \*G\* document member of the same patent family

Date of the actual completion of the international search

14 January 2004

Date of mailing of the international search report

25/02/2004

Name and mailing address of the ISA

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Authorized officer

Lejeune, R

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 03/05805

C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X D <sub>2</sub>	ARIGA H ET AL: "EXTRACELLULAR POLYSACCHARIDE FROM ENCAPSULATED STREPTOCOCCUS-SALIVARIUS-SSP-THERMOPHILUS OR 901 ISOLATED FROM COMMERCIAL YOGURT" JOURNAL OF FOOD SCIENCE, vol. 57, no. 3, 1992, pages 625-628, XP002266598 ISSN: 0022-1147 the whole document	13
X D <sub>3</sub>	EP 0 889 135 A (NESTLE SA) 7 January 1999 (1999-01-07) abstract page 4, line 16 - line 20 claims 1-7	13, 25-31
X D <sub>4</sub>	EP 0 889 136 A (NESTLE SA) 7 January 1999 (1999-01-07) abstract page 3, line 46 - line 51 claims 1-5	13, 25-31
P, X D <sub>5</sub>	BRICZINSKI E P ET AL: "PRODUCTION OF AN EXOPOLYSACCHARIDE-CONTAINING WHEY PROTEIN CONCENTRATE BY FERMENTATION OF WHEY" JOURNAL OF DAIRY SCIENCE, AMERICAN DAIRY SCIENCE ASSOCIATION. CHAMPAIGN, ILLINOIS, US, vol. 85, no. 12, December 2002 (2002-12), pages 3189-3197, XP001144013 ISSN: 0022-0302 the whole document	6, 7, 10, 11
X D <sub>6</sub>	DEGEEST BART ET AL: "Indication that the nitrogen source influences both amount and size of exopolysaccharides produced by Streptococcus thermophilus LY03 and modelling of the bacterial growth and exopolysaccharide production in a complex medium" APPLIED AND ENVIRONMENTAL MICROBIOLOGY, vol. 65, no. 7, July 1999 (1999-07), pages 2863-2870, XP002266599 ISSN: 0099-2240 the whole document	6, 7, 10, 11
A	HASSAN A N ET AL: "Factors affecting capsule size and production by lactic acid bacteria used as dairy starter cultures." INTERNATIONAL JOURNAL OF FOOD MICROBIOLOGY, vol. 64, no. 1/2, 2001, pages 199-203, XP002215197 the whole document	6-13

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## INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 03/05805

C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>DEGEEST B ET AL: "Optimization of the production and isolation of exopolysaccharides from Streptococcus thermophilus and strong evidence for their growth-associated biosynthesis." MEDEDELINGEN FACULTEIT LANDBOUWKUNDIGE EN TOEGEPASTE BIOLOGISCHE, vol. 62, no. 4 A-B, 1997, pages 1199-1206, XP001113161 1997 page 1205, paragraph 1; figure 5</p>	6-13
A	<p>CERNING J ET AL: "ISOLATION AND CHARACTERIZATION OF EXOPOLYSACCHARIDES FROM SLIME-FORMING MESOPHILIC LACTIC ACID BACTERIA" JOURNAL OF DAIRY SCIENCE, AMERICAN DAIRY SCIENCE ASSOCIATION. CHAMPAIGN, ILLINOIS, US, vol. 75, no. 3, 1 March 1992 (1992-03-01), pages 692-699, XP000261520 ISSN: 0022-0302 table 3</p>	6-13
A	<p>GANCEL F ET AL: "EXOPOLYSACCHARIDE PRODUCTION BY STREPTOCOCCUS SALIVARIUS SSP. THERMOPHILUS CULTURES. 19 CONDITIONS OF PRODUCTION" JOURNAL OF DAIRY SCIENCE, AMERICAN DAIRY SCIENCE ASSOCIATION. CHAMPAIGN, ILLINOIS, US, vol. 77, no. 3, 1 March 1994 (1994-03-01), pages 685-688, XP000435082 ISSN: 0022-0302 the whole document</p>	6-13

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**Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)**

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

**Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)**

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☒ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

**Remark on Protest**

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 03/05805

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 0889135	A	07-01-1999	EP 0889135 A1	07-01-1999
			AU 731219 B2	29-03-2001
			AU 7406098 A	14-01-1999
			CA 2235177 A1	05-01-1999
			JP 11049801 A	23-02-1999
			NZ 330718 A	26-05-2000
			US 5965127 A	12-10-1999
EP 0889136	A	07-01-1999	EP 0889136 A1	07-01-1999
			AU 747010 B2	09-05-2002
			AU 7406198 A	14-01-1999
			CA 2235103 A1	05-01-1999
			JP 11071404 A	16-03-1999
			NZ 330872 A	29-04-1999
			US 6054443 A	25-04-2000

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